

Having thus defined the invention, the following is claimed:

1. A wire feeder including a motor driving a set of feed rolls to force a welding wire from a spool through a welding torch to a welding operation, said wire feeder having an input lead to be connected to the output lead of a remotely located power source having an on condition and an off condition where a welding current is directed to said output lead only when said source is in said on condition, a receiver on said power source to shift said power source to said on condition upon receipt of a starting signal with a given code, a weld starting trigger with a weld start position located adjacent said torch to close a switch when said trigger is shifted to the weld position, a circuit to sense when said switch is closed, and a transmitter on said wire feeder to transmit a starting signal with said given code to said power source when said trigger switch is closed whereby said power source is shifted to its on condition when said trigger is in said weld position, said starting signal and said power source have the same given code.

2. A wire feeder as defined in claim 1 wherein said transmitter is an RF signal generator with a signal with a code corresponding to said same identification code.

3. A wire feeder as defined in claim 2 wherein said wire feeder has a voltage select device for manual adjustment to a condition corresponding to a desired arc voltage.

4. A wire feeder as defined in claim 3 including a circuit to convert said condition to a voltage level upon receipt of a signal with said given code and a transmitter on said wire feeder to

transmit said voltage level signal with said given code to said power source whereby said power source is set to said desired voltage.

5. A wire feeder as defined in claim 1 wherein said wire feeder has a voltage select device for manual adjustment to a condition corresponding to a desired voltage.

6. A wire feeder as defined in claim 5 including a circuit to convert said condition to a voltage level upon receipt of a signal with said given code and a transmitter on said wire feeder to transmit said voltage level signal with said given code to said power source whereby said power source is set to said desired voltage.

7. A method for turning on a particular power source of an electric arc welder having a receiver operative upon receipt of a signal with a specific identification code including a remotely located wire feeder connected to said power source by a power cable, said method comprising:

- (a) starting the welding cycle of a welding process for said welder;
- (b) sensing said starting;
- (c) transmitting a signal with said specific code from said wire feeder to said power source when said starting is sensed;
- (d) starting said power source upon receipt of said coded signal to direct power to said wire feeder by said cable; and,

(e) setting the code of said transmitted signal from said wire feeder to said specific code of said receiver on said power source;

8. A method as defined in claim 7 wherein said transmitted signal is RF.

9. A method as defined in claim 7 wherein said transmitted signal is by way of said cable.

10. A wire feeder including a motor driving a set of feed rolls to force a welding wire from a spool through a welding torch to a welding operation, said wire feeder having a input lead to be connected to the output lead of one of a plurality of remotely located power sources each having a signal receiver for receiving transmitted signal with a code unique to one of said power sources, said receiver having an output for controlling a parameter or condition of said one power source in accordance with a received signal with said unique code, a transmitter on each of said plurality of power sources for transmitting on said output lead a coded signal specific to said power source, a signal receiver on said wire feeder to receive a unique code from the specific power source connected to said wire feeder and a circuit in said wire feeder for transmitting command signals from said wire feeder, which command signals each have the unique code specific to the power source connected to said wire feeder.

11. A wire feeder as defined in claim 10 wherein said power source has an on condition switch activated by a coded command signal received by the receiver of said one power source.

12. A wire feeder as defined in claim 11 wherein said controlled parameter is voltage corresponding to a value on said received coded signal of said one power source.

13. A wire feeder as defined in claim 10 wherein said controlled parameter is voltage corresponding to a value on said received coded signal of said one power source.

14. A network comprising a wire feeder with an input for welding power and a plurality of power sources each having an output lead connectable to said input of said wire feeder, each of said power sources having a transmitter for transmitting a unique coded signal on its output lead and a receiver for coded command signals from a wire feeder, said wire feeder having circuit to decode
5 the coded signal received from one of said power sources connected to said wire feeder, said wire feeder having a transmitter for transmitting a coded signal with commands to be received by only said power source connected to said wire feeder for operation of the power source in accordance with command signal transmitted from said wire feeder.

15. A network as defined in claim 14 wherein said command signal transmitted from said wire feeder is a coded on signal with a code unique to said connected power source.

16. A network as defined in claim 15 wherein said coded on signal is generated by a switch operated in response to closing of the weld trigger of a gun operated by said wire feeder.

17. A network as defined in claim 16 wherein said command signal transmitted from said wire feeder is voltage selected by a knob on said wire feeder.

18. A network as defined in claim 15 wherein said command signal transmitted from said wire feeder is a coded voltage generated by a circuit responsive to a knob on said wire feeder.

19. A network as defined in claim 14 wherein said command signal transmitted from said wire feeder is a coded voltage generated by a circuit responsive to a knob on said wire feeder.

20. A network comprising a wire feeder with an input for welding power from the output power lead of one of a plurality of power sources, each of said power sources having a transmitter to transmit a unique coded signal on its output power lead and a receiver in said wire feeder with a circuit for identifying the actual power source connected to said wire feeder by identifying said
5 unique coded signal received by said wire feeder on its input lead.

21. A network as defined in claim 20 wherein each of said power sources has a receiver for receiving command signal with a code corresponding to a specific power source and said wire

feeder has a transmitter set to transmit command signals with a code unique to said power source from which said wire feeder receives power.

22. An electric arc welder with an output lead and a transmitter for transmitting a coded identification signal unique to said power source on said output lead.

23. A wire feeder with an input power lead and a receiver for receiving a coded identification signal on said input power lead, said identification signal being unique to a power source connected to said input lead.